

# INTERNATIONAL ASSOCIATION OF PANORAMIC PHOTOGRAPHERS

July 1988

Reston, VA

Orlando, FL

Seattle, WA



*Aerial view of Downtown Annapolis and the Naval Academy, taken with the Widelux 1500. Original in color.*

## Annapolis Convention Soon!

THE BIG GUNS ARE COMING : ARE YOU?

By David Paskin  
IAPP President

For the last two years, many people have called me and said, "Dave, when are we going to have a convention?" After a lot of effort, and with the help of some stalwart members, we finally got everything together and organized our next convention for September 8-10, 1988 in Annapolis, Maryland. We've reserved the hotel and restaurants, and planned outings and parties. I wrote to many manufacturers and distributors of panoramic cameras and some big names have agreed to come -- Kodak and Fuji to name two -- and you can't bigger than that!

As with any convention, certain things have to be firmed up by certain times, in particular guaranteeing hotel rooms and restaurants. There is only one ingredient missing from our convention and that is **YOUR PARTICIPATION**. I am pleased to tell you that people are signing up already. We will have a number of overseas visitors as well as people from around the country. For those of you who have not signed up yet, don't put it off any longer.

The last page of this newsletter is another copy of the registration form. Please complete it immediately and return it and your check to Dick Fowler in Orlando, Florida. Procrastinating time is over. **DO IT TODAY**. We are counting on you.

## INSIDE

Panoramic News  
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## Panoramas in Stock

By Doug and Mark Segal  
*Panoramic Stock Images, Chicago*

Many panoramic photographers who have been actively creating pans for three years or more have found themselves getting occasional requests for images to be used for display or for reproduction in magazines and brochures. Such requests are welcome to photographers who have invested large amounts of time and money pursuing their panoramic interests. As the field of panoramics continues to grow - and there is every indication that it is growing quite fast - we've noticed an increased demand for high-quality pan images from magazines and advertising agencies. The sale of existing images, particularly transparencies, is the business called stock photography.

Panoramic formats have not been embraced by the existing major stock agencies because of a few important reasons. Pans are not a "normal" format, and therefore require a specialized filing and protection systems that most agencies find impossible to incorporate into their current systems.

*cont. on p. 5*



*The Round Shot 35/35*

## Two New "Round Shots"

Two new 360° panoramic cameras from Switzerland have recently been introduced to the USA through Tekno, Inc. The Round Shot 35/35 and 65/70 cameras (originally called Pan-O-Scopes) are electronically controlled with a range of options.

The 35/35 version takes 35 mm film and has a fixed-focus 35 mm f2.8 Grandagon Rodenstock lens. Equivalent shutter speeds range from 1/15 to 1/1000 sec. Individual pictures are programmed in 90° intervals, up to 810° per shot. Six 360° pictures are possible on a normal cassette roll.

The Round Shot 65/70 takes 70 mm film (in 4.5 m cassettes) with a 65 mm f4.5

Grandagon Rodenstock lens. The lens can be shifted 40° up and 3° down. Focus can be set at 3, 5 or 10 m or infinity. Equivalent shutter speeds range from 1/250 to 4 seconds (with corresponding revolution times of 1 sec. to 16 min). As with the 35/35, individual pictures are programmed in up to nine 90° intervals, with at least ten 360° views possible on a 4.5 m roll.

Tekno's listed prices are \$4,500 for the 35/35 and \$13,500 for the 65/70. For more information, contact: Tekno, Inc., 100 W. Erie St., Chicago, IL 60610. Tel. 312-787-8922.

## KEN HANSEN GOES PANORAMIC

Ken Hansen Photographic -- which caters to the pro market in New York City -- is making a strong bid to become the nation's leading source of panoramic equipment. In the April '88 issue of Photo District News, Ken Hansen took out an impressive two-page ad promoting their new Panoramic Camera Center. The ad pictures 11 current panoramic and wide-angle cameras.

Although the store has always had a few panoramic cameras lying about, Hansen says their new emphasis reflects a resurgent and widespread interest in panoramic photography among their customers. That one ad produced 248 direct inquiries, which Hansen says is an excellent response.

Among the panoramic and wide-angle cameras now available from Ken Hansen are: the Round Shots 35/35 and 65/70, the Alfa Roto 60/70, the Globuscope, the Widelux 35 and 120 (rentals only), the Fujica G617, the Linhof Technorama 612 PC, and the custom-built 35 mm Ipan.

The Ipan, at about \$4000 new, is fitted with a 65 mm Super Angulon and snaps an image about 4.25" long onto 35 mm film (covering about 80° horizontally).

For more information, contact: Ken Hansen Photographic, 920 Broadway, 2nd flr., New York, NY 10010. Tel. 212-777-5900 or 777-0292.

## IAPP PANORAMA DOCUMENTATION

By Robert J. Lang

Over the past century, thousands of panoramic photographs have been taken by hundreds of panoramic photographers. Trying to locate prints of these photographs, or learn anything about the photographers, proves to be a difficult task. Museums and other public holders of photographic collections tend to mix any panoramas that they have with normal format material, making the pans impossible to locate without going through the entire lot. Likewise, the few listings of photographers available do not usually indicate the formats that they worked with.

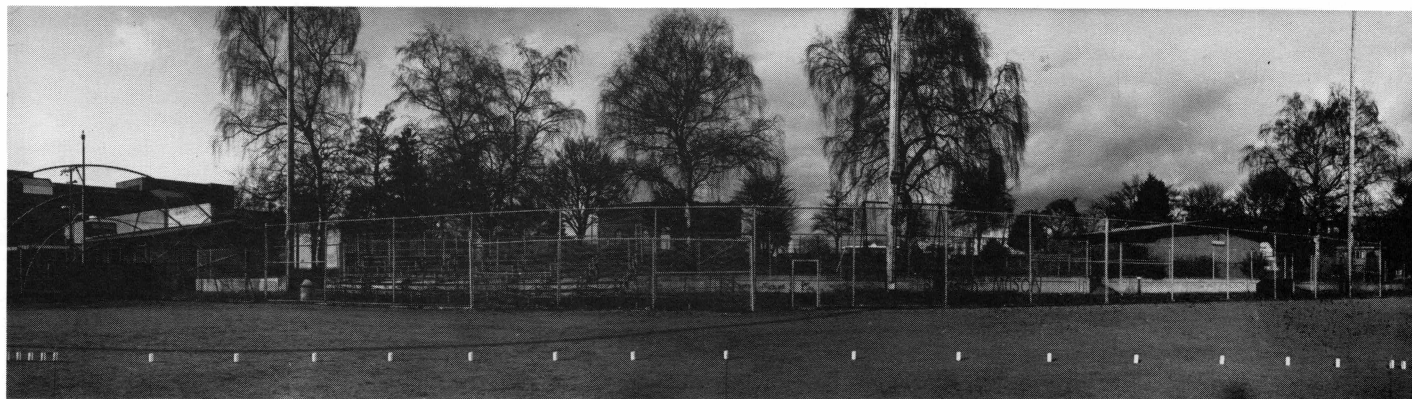
In order to rectify this situation and to document the history of our branch of photography, I have undertaken two projects under the auspices of the IAPP: The first is to compile an Index of Collections of Panoramas held by museums, libraries, universities and corporations. This index will include the name of the institution, number of prints held, photographers' names, subjects and print sizes. The institution will be requested to establish a separate category for panoramas in order to make them more easily available for public use. The second project involves compiling a list of panoramic photographers, past and present, along with a short biography of each. The biography would include the photographer's date of birth, life span, years of activity, locations photographed, typical subjects and equipment used.

These projects require contacting numerous institutions throughout the world, a process which I have already initiated. In addition, I am requesting the help of all our IAPP members. If you know of any panorama collections, please advise me of the name and address of the holding institution. Also, if you are a panoramic photographer (and you probably are if you receive this newsletter!), please send me a short biography including the information requested above, so that I can add you to the list. Lastly, if you know the names of other panoramic photographers, past or present, please send these along the relevant information.

Hopefully these projects will result in an increased awareness of panoramic photography. At the very least, they will document past and present work so that it may be found and enjoyed by those who come after us.

Contact: Robert J. Lang, 100 Cooper Ct., Port Jefferson, NY 11777.





*Beer Cans Prove It!*

## 140° is Widely Exaggerated

*Technique Useful for Measuring Any Horizontal Angle of View*

By John Stamets

With two long wires and a case of beer cans, I measured the horizontal angle of the Widelux. It's not 140°, as many ads would suggest, but only  $126.5^\circ \pm 1^\circ$ , at least on my camera (F7 353606). Another F7 Widelux, which had a noticeable shadowing on one side, measured only  $125^\circ$ .

To be fair, literature from the camera's manufacturer, Panon Camera Shoko in Tokyo, states the camera's visual angle as "140° by diagonal measurement." But those who market the camera tend to drop the diagonal part, leading most users to assume incorrectly that 140° is the horizontal panoramic sweep. At any rate, I was not satisfied with saying "140° diagonally," so I came up with the following simple technique which I believe can measure the horizontal view angle of any camera within one degree.

Of course, for a normal fixed-lens camera, the angle of view can be accurately estimated from the focal length of the lens and the length of the image on the film (At infinity, angle of view =  $2\alpha$  where  $\tan(\alpha) = L/2f$ ;  $L$  = image length;  $f$  = focal length.) Even so, theory can be tested by empirical fact using this "beer can" technique.

All you need is simple geometry, a large flat space and about \$20 worth of hardware, including two cables about 10 meters long (30 to 35 ft) and a somewhat longer tape measure. And of course the soda or beer cans, spray-painted white. If beer, these are best emptied with your assistants a day or two before the actual measurement is made. This technique may not work if emptied immediately beforehand.

In a nutshell, the technique is this: The camera's position (tripod) defines the center of a circle of about 10 m in radius. Around the circumference, you place an array of cans at accurately measured angular intervals. In the extreme case, you could set up 360 cans at  $1^\circ$  intervals (every 17.45 cm at 10 m). Then, with camera level, simply snap a photo from the center of the circle and count how many cans you can see in the resulting picture.

Obviously, it's a lot of trouble to mark off every degree on the circle when you already have some idea of how wide the camera is. Fortunately, it's easy to accurately mark off smaller measurement arrays using a radius cable (or two) and a tape measure. For instance, using just two equal-length cables, you can accurately mark off  $60.0^\circ$  intervals, as shown in the diagram. For smaller intervals, a useful formula is for chord length between two points on a circle. For  $\theta = 10^\circ$  or less, use:

$x = R \sin(\theta)$  where  $x$  is the chord length and  $R$  is the radius. For  $1^\circ$ ,  $x = 0.01745 R$ . A typical can is 6.75 cm wide, spanning  $0.38^\circ$  at 10 m.

Near the edges of the expected angle of view, place the cans at  $1^\circ$  intervals, about 10 or 15 per side. For the technique to work, the edges of the resulting image must intersect these "1° arrays" on both sides.

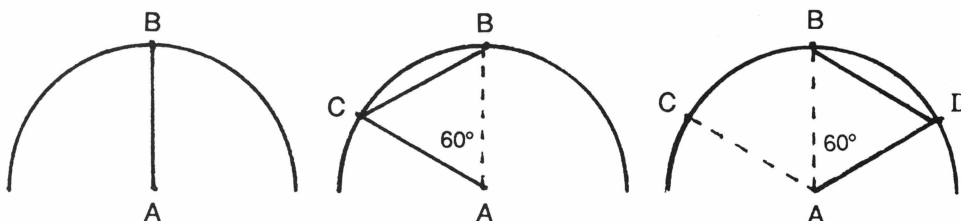
For the Widelux measurement shown here (made with the help of friends Skip Kerr and Rich Lewis), we figured that the horizontal angle of view was less than  $140^\circ$ , but probably more than  $120^\circ$ .

Therefore, we used the two radius cables (each marked at exactly 31'6") to place two cans at exactly  $120^\circ$  apart. Actually the points were marked with spikes, and the cans placed immediately behind the spikes. Starting at these "120° cans," we added 10 more cans/spikes at  $1^\circ$  intervals on each side using the radius cable attached at the camera position and a piece of cardboard cut to the appropriate chord length (6.6"). The final measurement array spanned  $140^\circ$  and consisted of 23 cans, including the central can. To make the picture more interesting, we added 14 more cans at irregular intervals around the circle. However, these additional cans were not needed for making the measurement.

Back at the center of the circle, the camera was leveled at the tripod's lowest position and carefully aimed at the central can, so that hopefully both "120° cans" would appear in the final photo. They did, and then it was a simple manner of counting the other "1° cans" visible at the photo's edges to arrive at the angle of view.

In the photo above, five  $1^\circ$  cans are visible on the left edge and three on the right. Since the innermost of these cans on either side define  $120^\circ$ , the horizontal angle of view is  $126^\circ$ . Inspection of a greater enlargement, as well as repeated measurements, suggests that the actual view is closer to  $126.5^\circ$ .

For more detailed methods, send a SASE to: John Stamets, 403 14th Ave. E., Seattle, WA 98112.



Two equal-length cables attached at A and B can be used to mark off equilateral triangles, seen as  $60^\circ$  intervals from camera position at A. Cans at C and D are exactly  $120^\circ$  apart.



*The World is Round: Beyond Photography*

## A Traveling Exhibit of Panoramic Art

By Robert J. Lang

"The World is Round: Contemporary Panoramas" is an exhibition of artworks currently touring the northeastern United States. Photographs, sculpture, paintings and mixed media works reflect the feelings of 24 artists in panoramic format. Included are the photographic contributions of Bob Chaplin, Jan Dibbets, David Hockney, David Horton, David McGlynn, Richard McKown, Robert Rauschenberg, Paul Smith and IAPP member Kenneth Snelson.

The exhibition was organized by The Hudson River Museum with artist Marcia Clark as guest curator. The accompanying catalogue contains reproductions of many

works, as well as comments and observations by the artists. For those panoramic photographers fortunate enough to be in the northeastern U.S. during the tour, a visit will be inspirational. The less fortunate should certainly consider obtaining a copy of the catalogue, which will be available from The Hudson River Museum (\$14.95 plus postage; address below).

While the exhibit was at the Parrish Art Museum in Southampton, NY, Robert J. Lang took the above photograph (about 263°) on 35 mm film using a self-built 360° camera.

The remaining 1988 exhibition schedule is:

**July 22 - September 18**

Albany Institute of History and Art  
Albany, New York

**October 9 - November 25**

College Art Gallery  
State University of New York  
New Paltz, New York

**December 11 - February 26**

The Hudson River Museum  
Trevor Park-on-Hudson  
511 Warburton Avenue  
Yonkers, New York 10701  
914-963-4550

## Arched Display for Vertical Pans

Panoramas are normally shot and viewed horizontally, but a "vertical" 360° panorama -- with the sky overhead and your feet below -- may be a bit hard to appreciate when rolled out flat. But leave it to someone from Down Under to hit on a good solution for this one. IAPP member Rudi Untersee (6/24 Calder Rd., Rydalmere, NSW 2116, Australia) sent in the accompanying photo of how he displayed a vertical 360° pan at the Queensland Museum in Brisbane. The museum had contracted him to shoot a vertical panorama for the entrance to an exhibit: "The History of Photography."



### IAPP DUES ARE DUE!

Many of you have not paid up for 1988. If you would like to continue to receive this newsletter and enjoy the other benefits of being an IAPP member, please send in your \$20 soon to: IAPP, Richard Fowler, 1739 Limewood Lane, Orlando, FL 32818. If you did not receive the Feb. '88 newsletter ("Panoramas Revisited" and "Ron Klein in China"), write to Richard Fowler and he'll send you one.

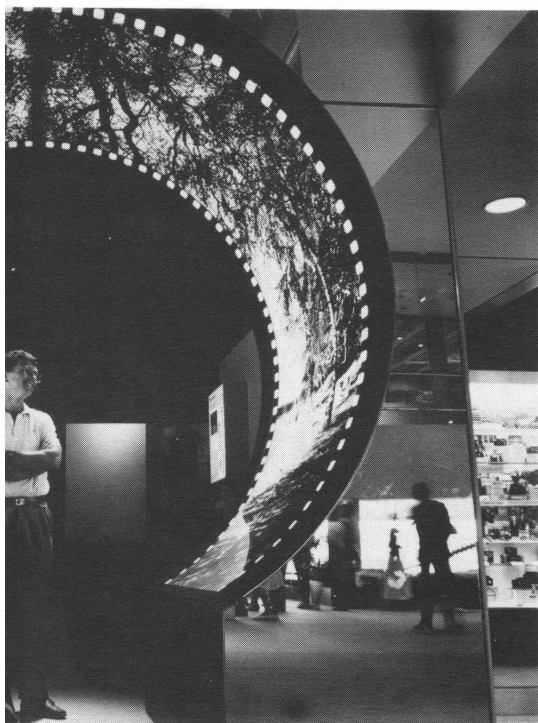
Send newsletter articles, ideas, photos (with return postage), and ads to: IAPP Newsletter c/o John Stamets, 403 14th Ave. E., Seattle, WA 98112. Free classified ads for IAPP members.

**Wanted:** 8x20" sheet film (b&w or color). Anyone interested in a special order? Contact Bruce Cook, 135 Dore St., San Francisco, CA 94103. 415-553-4178.



For the pan location, Rudi chose a site beneath a tree on the walkway along Brisbane's riverfront park. He shot the scene on Ektachrome using a 70 mm Alpa Roto, to which he added a counterweight to achieve a uniform rotation speed while in the vertical orientation. The original image was enlarged to a 50"-long Cibachrome transparency, which was then mounted in a curved back-lit arch at the museum.

The displayed image begins with a view looking north along the waterfront park, then sweeps up into a sky overhead filled with tree branches, then comes back down looking south along the waterfront. The film sprocket holes were included in the enlargement so that the special nature of the photograph would be noticed.



## Panoramic Stock *from p. 1*

Also, technical and practical hands-on experience with rotating and super-wide angle equipment (like that of IAPP members) is an absolute necessity for discussing particular image needs with clients, and for editing new submissions from contributing photographers. The marketing of panoramic images requires a very different approach towards promotion and advertising.

Panoramic Stock Images was formed in 1987 in Chicago to fill the needs of photographers and clients who want to use pans. Photographers who are new to the stock business often ask what kind of photos our agency needs. Rather than dictate a "want" list of our specific needs, we've developed the habit of encouraging photographers to shoot what they enjoy and what inspires them to shoot panoramics. Of course, we're always looking for the classic views, such as the often requested cityscape of Los Angeles (from a new pan angle) or a dramatic sunrise/sunset over water.

We suggest you look at images in the four principal categories under which we lease the majority of our images and think about how the style of pans which you shoot fit into each of these areas. These include magazine editorial, print advertising, corporate publications/annual reports and sales brochures. Panoramics are also sold to book and poster publishers, corporate art consultants, and ad agencies.

If you are creating panoramics on a continuing basis, you may want to consider whether stock sales may be a business that can work for you. Depending on the style of images you create, there may be a large market for your work that you are not aware of. Before getting involved, you need to consider a few points:

\* **Images:** Is your stock file of *transparencies* varied enough and large enough to generate consistent stock sales? (Although many panoramic photographers think in terms of prints, remember that the four-color reproduction industry is based on transparencies.) Is your file marketable? Do you have more than one type of panoramic format in your file? Are you willing to part with some of your best transparencies for several years?

\* **Time:** The nature of stock selling is quick turn-around time. The client wants to see the material today or tomorrow via Fed. Ex. The opportunity will not wait. Timely submissions from photographers to their agency are also necessary to provide regular, fresh infusions of new images to the files.

\* **Money:** You may sell direct and/or through an agency. Most stock agencies split sales with photographers at even 50 per cent. Agencies are staffed to do nothing but sell stock and are experienced in negotiating the highest reasonable prices for image uses.

Our files include the following panoramic formats: Widelux 35mm and 120, Fujica 6x17 cm, Linhof 6x12 and 6x17 cm, and custom rotating cameras in 6 cm and 70mm size formats such as Hulcherama, Alpa and Roundshot.

We welcome inquiries from IAPP photographers who are serious about saleable panoramic stock and invite you to call or write for further information:

Panoramic Stock Images  
230 N. Michigan Ave.  
Chicago, IL 60601.

Tel. 312-236-8545; 800-543-5250.



# I A P P

This newsletter is a quarterly publication of the International Association of Panoramic Photographers. Our offices are distributed coast-to-coast in the USA at the addresses below. © 1988 IAPP.

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Annapolis Sailing School  
Annapolis, MD 21403

## Tentative Schedule for 1988 IAPP Convention, Annapolis, MD

Wed. Sept. 7	4 - 6:30 pm	Registration Desk Opens
Thur. Sept. 8	8:30 am	Registration Desk Opens
	10:00 am	General Business Meeting
	12 - 1:30	"Get To Know You" Buffet Luncheon (Hotel)
	1:30 pm	Sub Group Meetings / Moderators Widelux / Dick Fowler, Joe Meehan Hulcher / Jeff Aldrich, Mark Segal Cirkut / Ron Klein, Bill McBride Alpa / Karl Heitz Marketing Panoramic Photos / David Orbach
	4:00 pm	Meetings Close. Free time before cruise.
	5:00 pm	Cruise Up Severn River, Cash Bar & Dinner
	9:00 pm	Return To Hotel
Fri. Sept 9	10:00 am	Manufacturers' Time. Each manufacturer has up to 30 min. to discuss products.
	12 - 1:30	Lunch - On Your Own
	2:00 pm	Picture Taking Opportunities Historic Annapolis, Naval Academy; Marine Annapolis - By Boat - Reservations Required (Kodak and Fuji To Supply Film)
	6:15 pm	Buses Leave Hotel For Banquet, Cash Bar
	7:30 pm	Banquet At Bay Ridge Inn
Sat. Sept. 10	9:30 am	Swap Meet - Bring And Buy
	10:30 am	Wrap-Up General Meeting
	12 noon	Lunch - Make Your Own Sandwich - Hotel
	2:00 pm	Sub-Meetings Review Positions
	3:00 pm	Print Exhibition and Judging
	5:30 pm	Cocktail Party And Buffet Dinner At The Annapolis Sailing School. Guests of Mr. and Mrs. J. Wood.
		Awards Announced.

Suggestions welcome. Please send them to David Paskin.

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(301) 528-1868

# Cirkut in Macro Mode

By Robert J. Lang

Rotating panoramic cameras, such as the Cirkut, are almost universally used at large subject distances. It is possible, however, to use them in more confined areas or even in macro-mode for photographing objects about the size of the film and smaller. In principle the problem is the same: keep the movement of the image synchronized with the movement of the film. In practise this can be difficult to achieve.

The macro-panoramic technique can be used to make long strip photographs of small objects, arranged in a circle around the camera. It may be of interest to those who photograph architectural models, toys, flowers or anything else down to the size of insects. Another very useful application is the full-size copying of other panoramic photographs.

Macro-panoramic photography with a "swing-lens" type camera is the same as with a normal camera, assuming that the lens can be close-focused. This is because swing-lens cameras (e.g. Widelux) produce a stationary image on a curved film surface by rotating about the lens nodal point. Although the lens and exposure slit move, the image itself remains stationary.

This is not the case for a 360° panoramic camera, such as the Cirkut, which has a moving film plane rotating about a pivot point offset by some varying amount. As the camera turns, the image itself moves. In this case, the merger of panoramic and macro-photography becomes more complicated. Still, the Cirkut is potentially the best macro-panoramic camera because of the extendable bellows, and a choice of lenses.

The simple theory of the rotating panoramic camera states that the amount of film required for a 360° view is equal to  $2\pi F$ , where  $F$  is the focus distance of the lens (true focal length plus lens extension required to focus). Using this criteria, however, results in some horizontal blurring, which becomes more and more intolerable as the subject distance decreases. At the typical distances in macro-photography, this simple theory is totally unuseable.

Some time ago I wrote, and offered to IAPP members, a computer program which compensated for the location of the pivot point when calculating the required pinion gears for Cirkut cameras. I have now modified this program to provide the information needed to produce macro-panoramas. The user inputs the focal length of the lens and some dimensions of the camera to be used. The computer then



supplies a list of gears with the associated focus distance, lens extension, distance from pivot point to subject, image magnification and f-stop correction factor. The gears required for macro-photography are always considerably smaller (fewer teeth) than those used for normal subject distances. The appropriate gears can be purchased, or a gear supplied for a long focal length lens can be used with a short focal length lens in the macro mode. For example, a 32-tooth gear supplied for an 18" lens on a #8 Cirkut outfit matches with a 6.25" lens when the subject is 25" from the film plane (used for photo above).

To set up for a macro shot with a Cirkut camera, a little carpentry work is required. It is convenient to mount the camera turntable in the middle of a suitable size piece of plywood. For turntables with a center spindle, a hole is drilled for the spindle, with a counterbore for the locking pin, so that the tripod flanges lay flat on the surface. The turntables supplied with some of the smaller Cirkut cameras have no spindle and must be clamped to the plywood. A circle, with a radius equal to the pivot-to-subject distance, is drawn with its center at the center of the turntable. Depth-of-field circles can be drawn for various f-stops also. The subjects to be photographed are then placed within the

area of acceptable focus around the turntable. Pedestals or stands may be used to bring the objects to the proper level.

The camera is pre-focused using the information supplied by the computer program. After selecting the desired gear, the required focus distance (film plane to subject) is determined. The camera is placed on a flat surface and the lensboard is removed. A ruler is placed through the opening and against the ground glass. The specified subject distance is marked, and a flat object, such as a box with some fine lettering on it, is placed at the mark. The bellows is drawn out to the approximate focus position (focal length plus lens extension) and the lens board is replaced. Since it is difficult to focus using lens movements alone when near the 1X magnification point, an iterative approach is used. The test object is moved back and forth until it appears sharp on the ground glass. The bellows is adjusted slightly and the object is moved again. This process is repeated until the object appears sharp and also rests on the previously made mark. A further check can be made if a line of known length is drawn on the test object. The image size can be measured with a ruler on the ground glass and the magnification compared to the that predicted by the computer program. The focus position can be marked on the camera bed so that this procedure will not have to be repeated again.

The film box can now be attached to the body, the pinion gear installed and the whole assembly mounted on the turntable. The computer data is consulted for the f-stop correction and the exposure settings are made. The photograph is then taken in the usual manner.

For a copy of the computer program, (written in BASIC) send a self-addressed envelope with two postage stamps to: Robert Lang, 100 Cooper Ct., Port Jefferson, NY 11777. I would also like to know of other applications of macro-panoramic photography, or how the technique can solve a unique problem.



Image size on 220 film (taken with Cirkut #8 and 6.25" lens wide open)

# Registration for IAPP Conference

Annapolis, Maryland

September 7-10, 1988

Name: \_\_\_\_\_ Title/Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_ Country: \_\_\_\_\_

Business Phone: \_\_\_\_\_ Home phone: \_\_\_\_\_

**Conference Registration** includes admittance to all programs, two lunches, cruise and dinner on Severn River, buffet dinner at Bay Bridge Inn, cocktail party and dinner at Annapolis Sailing School, boat trip around Annapolis Harbor, coffee breaks, etc.

<b>IAPP Member</b>	Before Aug. 10, 1988:	\$125	\$ _____
	After Aug. 10:	140	_____

<b>Non-Member</b>	Add to fees above:	20	_____
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<b>Spouses/children</b>	Before Aug. 10:	100	_____
	After Aug. 10:	115	_____

Names: \_\_\_\_\_

Total Enclosed: \$ \_\_\_\_\_

Return this completed form and check (to IAPP) on or before Aug. 10, 1988 to:

**IAPP**  
**Richard Fowler**  
**1739 Limewood Lane**  
**Orlando, FL 32818-5960 USA**  
Tel. 407-293-8003

Note: Those who do not pre-register may register at the Conference at the higher rate.  
Additional function tickets available at the Conference.

## Sub-Group Registration

Please advise us of which groups you plan to attend so we may reserve the correct space.

	yes	no
Widelux	_____	_____
Hulcher	_____	_____
Cirkut	_____	_____
Alpa	_____	_____
Marketing Pans	_____	_____

**Hotel Rooms** You should make you own hotel reservations (mention IAPP) at:

The Raddison Annapolis Hotel  
126 West St.  
Annapolis, MD 21401  
(301-263-7777, or 800-333-3333)

Rates for single rooms are \$75 per night (Wed/Thur) and \$95 (Fri/Sat). For a double, add \$10 per night.





*The Round Shot 35/35*

## Two New "Round Shots"

Two new 360° panoramic cameras from Switzerland have recently been introduced to the USA through Tekno, Inc. The Round Shot 35/35 and 65/70 cameras (originally called Pan-O-Scopes) are electronically controlled with a range of options.

The 35/35 version takes 35 mm film and has a fixed-focus 35 mm f2.8 Grandagon Rodenstock lens. Equivalent shutter speeds range from 1/15 to 1/1000 sec. Individual pictures are programmed in 90° intervals, up to 810° per shot. Six 360° pictures are possible on a normal cassette roll.

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Grandagon Rodenstock lens. The lens can be shifted 40° up and 3° down. Focus can be set at 3, 5 or 10 m or infinity. Equivalent shutter speeds range from 1/250 to 4 seconds (with corresponding revolution times of 1 sec. to 16 min). As with the 35/35, individual pictures are programmed in up to nine 90° intervals, with at least ten 360° views possible on a 4.5 m roll.

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## KEN HANSEN GOES PANORAMIC

Ken Hansen Photographic -- which caters to the pro market in New York City -- is making a strong bid to become the nation's leading source of panoramic equipment. In the April '88 issue of Photo District News, Ken Hansen took out an impressive two-page ad promoting their new Panoramic Camera Center. The ad pictures 11 current panoramic and wide-angle cameras.

Although the store has always had a few panoramic cameras lying about, Hansen says their new emphasis reflects a resurgent and widespread interest in panoramic photography among their customers. That one ad produced 248 direct inquiries, which Hansen says is an excellent response.

Among the panoramic and wide-angle cameras now available from Ken Hansen are: the Round Shots 35/35 and 65/70, the Alfa Roto 60/70, the Globuscope, the Widelux 35 and 120 (rentals only), the Fujica G617, the Linhof Technorama 612 PC, and the custom-built 35 mm Ipan.

The Ipan, at about \$4000 new, is fitted with a 65 mm Super Angulon and snaps an image about 4.25" long onto 35 mm film (covering about 80° horizontally).

For more information, contact: Ken Hansen Photographic, 920 Broadway, 2nd fl., New York, NY 10010. Tel. 212-777-5900 or 777-0292.

## IAPP PANORAMA DOCUMENTATION

By Robert J. Lang

Over the past century, thousands of panoramic photographs have been taken by hundreds of panoramic photographers. Trying to locate prints of these photographs, or learn anything about the photographers, proves to be a difficult task. Museums and other public holders of photographic collections tend to mix any panoramas that they have with normal format material, making the pans impossible to locate without going through the entire lot. Likewise, the few listings of photographers available do not usually indicate the formats that they worked with.

In order to rectify this situation and to document the history of our branch of photography, I have undertaken two projects under the auspices of the IAPP: The first is to compile an Index of Collections of Panoramas held by museums, libraries, universities and corporations. This index will include the name of the institution, number of prints held, photographers' names, subjects and print sizes. The institution will be requested to establish a separate category for panoramas in order to make them more easily available for public use. The second project involves compiling a list of panoramic photographers, past and present, along with a short biography of each. The biography would include the photographer's date of birth, life span, years of activity, locations photographed, typical subjects and equipment used.

These projects require contacting numerous institutions throughout the world, a process which I have already initiated. In addition, I am requesting the help of all our IAPP members. If you know of any panorama collections, please advise me of the name and address of the holding institution. Also, if you are a panoramic photographer (and you probably are if you receive this newsletter!), please send me a short biography including the information requested above, so that I can add you to the list. Lastly, if you know the names of other panoramic photographers, past or present, please send these along the relevant information.

Hopefully these projects will result in an increased awareness of panoramic photography. At the very least, they will document past and present work so that it may be found and enjoyed by those who come after us.

Contact: Robert J. Lang, 100 Cooper Ct., Port Jefferson, NY 11777.



*Beer Cans Prove It!*

## 140° is Widely Exaggerated

*Technique Useful for Measuring Any Horizontal Angle of View*

By John Stamets

With two long wires and a case of beer cans, I measured the horizontal angle of the Widelux. It's not 140°, as many ads would suggest, but only  $126.5^\circ \pm 1^\circ$ , at least on my camera (F7 353606). Another F7 Widelux, which had a noticeable shadowing on one side, measured only  $125^\circ$ .

To be fair, literature from the camera's manufacturer, Panon Camera Shoko in Tokyo, states the camera's visual angle as "140° by diagonal measurement." But those who market the camera tend to drop the diagonal part, leading most users to assume incorrectly that 140° is the horizontal panoramic sweep. At any rate, I was not satisfied with saying "140° diagonally," so I came up with the following simple technique which I believe can measure the horizontal view angle of any camera within one degree.

Of course, for a normal fixed-lens camera, the angle of view can be accurately estimated from the focal length of the lens and the length of the image on the film (At infinity, angle of view =  $2\alpha$  where  $\tan(\alpha) = L/2f$ ;  $L$  = image length;  $f$  = focal length.) Even so, theory can be tested by empirical fact using this "beer can" technique.

All you need is simple geometry, a large flat space and about \$20 worth of hardware, including two cables about 10 meters long (30 to 35 ft) and a somewhat longer tape measure. And of course the soda or beer cans, spray-painted white. If beer, these are best emptied with your assistants a day or two before the actual measurement is made. This technique may not work if emptied immediately beforehand.

In a nutshell, the technique is this: The camera's position (tripod) defines the center of a circle of about 10 m in radius. Around the circumference, you place an array of cans at accurately measured angular intervals. In the extreme case, you could set up 360 cans at  $1^\circ$  intervals (every 17.45 cm at 10 m). Then, with camera level, simply snap a photo from the center of the circle and count how many cans you can see in the resulting picture.

Obviously, it's a lot of trouble to mark off every degree on the circle when you already have some idea of how wide the camera is. Fortunately, it's easy to accurately mark off smaller measurement arrays using a radius cable (or two) and a tape measure. For instance, using just two equal-length cables, you can accurately mark off  $60.0^\circ$  intervals, as shown in the diagram. For smaller intervals, a useful formula is for chord length between two points on a circle. For  $\theta = 10^\circ$  or less, use:

$x = R \sin(\theta)$  where  $x$  is the chord length and  $R$  is the radius. For  $1^\circ$ ,  $x = 0.01745 R$ . A typical can is 6.75 cm wide, spanning  $0.38^\circ$  at 10 m.

Near the edges of the expected angle of view, place the cans at  $1^\circ$  intervals, about 10 or 15 per side. For the technique to work, the edges of the resulting image must intersect these "1° arrays" on both sides.

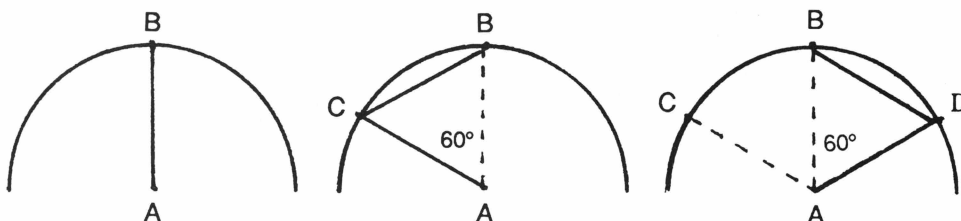
For the Widelux measurement shown here (made with the help of friends Skip Kerr and Rich Lewis), we figured that the horizontal angle of view was less than  $140^\circ$ , but probably more than  $120^\circ$ .

Therefore, we used the two radius cables (each marked at exactly 31'6") to place two cans at exactly  $120^\circ$  apart. Actually the points were marked with spikes, and the cans placed immediately behind the spikes. Starting at these "120° cans," we added 10 more cans/spikes at  $1^\circ$  intervals on each side using the radius cable attached at the camera position and a piece of cardboard cut to the appropriate chord length (6.6"). The final measurement array spanned  $140^\circ$  and consisted of 23 cans, including the central can. To make the picture more interesting, we added 14 more cans at irregular intervals around the circle. However, these additional cans were not needed for making the measurement.

Back at the center of the circle, the camera was leveled at the tripod's lowest position and carefully aimed at the central can, so that hopefully both "120° cans" would appear in the final photo. They did, and then it was a simple manner of counting the other "1° cans" visible at the photo's edges to arrive at the angle of view.

In the photo above, five  $1^\circ$  cans are visible on the left edge and three on the right. Since the innermost of these cans on either side define  $120^\circ$ , the horizontal angle of view is  $126^\circ$ . Inspection of a greater enlargement, as well as repeated measurements, suggests that the actual view is closer to  $126.5^\circ$ .

For more detailed methods, send a SASE to: John Stamets, 403 14th Ave. E., Seattle, WA 98112.



Two equal-length cables attached at A and B can be used to mark off equilateral triangles, seen as  $60^\circ$  intervals from camera position at A. Cans at C and D are exactly  $120^\circ$  apart.



*The World is Round: Beyond Photography*

## A Traveling Exhibit of Panoramic Art

By Robert J. Lang

"The World is Round: Contemporary Panoramas" is an exhibition of artworks currently touring the northeastern United States. Photographs, sculpture, paintings and mixed media works reflect the feelings of 24 artists in panoramic format. Included are the photographic contributions of Bob Chaplin, Jan Dibbets, David Hockney, David Horton, David McGlynn, Richard McKown, Robert Rauschenberg, Paul Smith and IAPP member Kenneth Snelson.

The exhibition was organized by The Hudson River Museum with artist Marcia Clark as guest curator. The accompanying catalogue contains reproductions of many

works, as well as comments and observations by the artists. For those panoramic photographers fortunate enough to be in the northeastern U.S. during the tour, a visit will be inspirational. The less fortunate should certainly consider obtaining a copy of the catalogue, which will be available from The Hudson River Museum (\$14.95 plus postage; address below).

While the exhibit was at the Parrish Art Museum in Southampton, NY, Robert J. Lang took the above photograph (about 263°) on 35 mm film using a self-built 360° camera.

The remaining 1988 exhibition schedule is:

**July 22 - September 18**

Albany Institute of History and Art  
Albany, New York

**October 9 - November 25**

College Art Gallery  
State University of New York  
New Paltz, New York

**December 11 - February 26**

The Hudson River Museum  
Trevor Park-on-Hudson  
511 Warburton Avenue  
Yonkers, New York 10701  
914-963-4550

## Arched Display for Vertical Pans

Panoramas are normally shot and viewed horizontally, but a "vertical" 360° panorama -- with the sky overhead and your feet below -- may be a bit hard to appreciate when rolled out flat. But leave it to someone from Down Under to hit on a good solution for this one. IAPP member Rudi Untersee (6/24 Calder Rd., Rydalmere, NSW 2116, Australia) sent in the accompanying photo of how he displayed a vertical 360° pan at the Queensland Museum in Brisbane. The museum had contracted him to shoot a vertical panorama for the entrance to an exhibit: "The History of Photography."



### IAPP DUES ARE DUE!

Many of you have not paid up for 1988. If you would like to continue to receive this newsletter and enjoy the other benefits of being an IAPP member, please send in your \$20 soon to: IAPP, Richard Fowler, 1739 Limewood Lane, Orlando, FL 32818. If you did not receive the Feb. '88 newsletter ("Panoramas Revisited" and "Ron Klein in China"), write to Richard Fowler and he'll send you one.

Send newsletter articles, ideas, photos (with return postage), and ads to: IAPP Newsletter c/o John Stamets, 403 14th Ave. E., Seattle, WA 98112. Free classified ads for IAPP members.

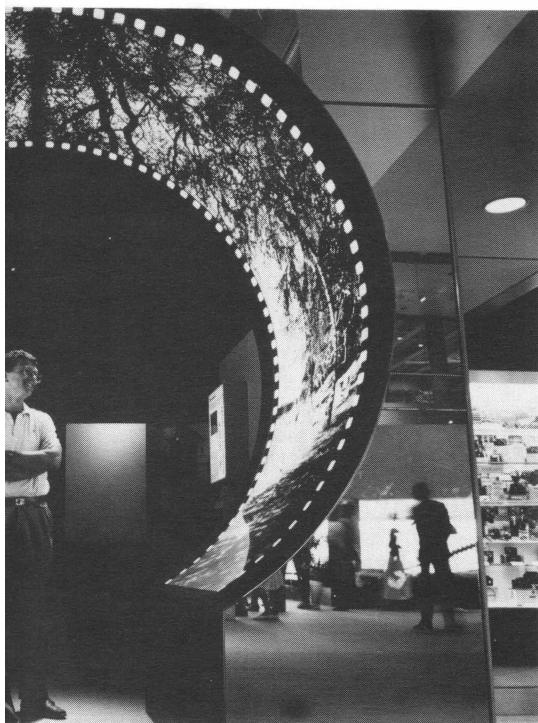
**Wanted:** 8x20" sheet film (b&w or color). Anyone interested in a special order? Contact Bruce Cook, 135 Dore St., San Francisco, CA 94103. 415-553-4178.





For the pan location, Rudi chose a site beneath a tree on the walkway along Brisbane's riverfront park. He shot the scene on Ektachrome using a 70 mm Alpa Roto, to which he added a counterweight to achieve a uniform rotation speed while in the vertical orientation. The original image was enlarged to a 50"-long Cibachrome transparency, which was then mounted in a curved back-lit arch at the museum.

The displayed image begins with a view looking north along the waterfront park, then sweeps up into a sky overhead filled with tree branches, then comes back down looking south along the waterfront. The film sprocket holes were included in the enlargement so that the special nature of the photograph would be noticed.



## Panoramic Stock *from p. 1*

Also, technical and practical hands-on experience with rotating and super-wide angle equipment (like that of IAPP members) is an absolute necessity for discussing particular image needs with clients, and for editing new submissions from contributing photographers. The marketing of panoramic images requires a very different approach towards promotion and advertising.

Panoramic Stock Images was formed in 1987 in Chicago to fill the needs of photographers and clients who want to use pans. Photographers who are new to the stock business often ask what kind of photos our agency needs. Rather than dictate a "want" list of our specific needs, we've developed the habit of encouraging photographers to shoot what they enjoy and what inspires them to shoot panoramics. Of course, we're always looking for the classic views, such as the often requested cityscape of Los Angeles (from a new pan angle) or a dramatic sunrise/sunset over water.

We suggest you look at images in the four principal categories under which we lease the majority of our images and think about how the style of pans which you shoot fit into each of these areas. These include magazine editorial, print advertising, corporate publications/annual reports and sales brochures. Panoramics are also sold to book and poster publishers, corporate art consultants, and ad agencies.

If you are creating panoramics on a continuing basis, you may want to consider whether stock sales may be a business that can work for you. Depending on the style of images you create, there may be a large market for your work that you are not aware of. Before getting involved, you need to consider a few points:

\* **Images:** Is your stock file of *transparencies* varied enough and large enough to generate consistent stock sales? (Although many panoramic photographers think in terms of prints, remember that the the four-color reproduction industry is based on transparencies.) Is your file marketable? Do you have more than one type of panoramic format in your file? Are you willing to part with some of your best transparencies for several years?

\* **Time:** The nature of stock selling is quick turn-around time. The client wants to see the material today or tomorrow via Fed. Ex. The opportunity will not wait. Timely submissions from photographers to their agency are also necessary to provide regular, fresh infusions of new images to the files.

\* **Money:** You may sell direct and/or through an agency. Most stock agencies split sales with photographers at even 50 per cent. Agencies are staffed to do nothing but sell stock and are experienced in negotiating the highest reasonable prices for image uses.

Our files include the following panoramic formats: Widelux 35mm and 120, Fujica 6x17 cm, Linhof 6x12 and 6x17 cm, and custom rotating cameras in 6 cm and 70mm size formats such as Hulcherama, Alpa and Roundshot.

We welcome inquiries from IAPP photographers who are serious about saleable panoramic stock and invite you to call or write for further information:

Panoramic Stock Images  
230 N. Michigan Ave.  
Chicago, IL 60601.

Tel. 312-236-8545; 800-543-5250.

# I A P P

This newsletter is a quarterly publication of the International Association of Panoramic Photographers. Our offices are distributed coast-to-coast in the USA at the addresses below. © 1988 IAPP.

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Annapolis, MD 21403

## Tentative Schedule for 1988 IAPP Convention, Annapolis, MD

Wed. Sept. 7	4 - 6:30 pm	Registration Desk Opens
Thur. Sept. 8	8:30 am	Registration Desk Opens
	10:00 am	General Business Meeting
	12 - 1:30	"Get To Know You" Buffet Luncheon (Hotel)
	1:30 pm	Sub Group Meetings / Moderators Widelux / Dick Fowler, Joe Meehan Hulcher / Jeff Aldrich, Mark Segal Cirkut / Ron Klein, Bill McBride Alpa / Karl Heitz Marketing Panoramic Photos / David Orbach
	4:00 pm	Meetings Close. Free time before cruise.
	5:00 pm	Cruise Up Severn River, Cash Bar & Dinner
	9:00 pm	Return To Hotel
Fri. Sept 9	10:00 am	Manufacturers' Time. Each manufacturer has up to 30 min. to discuss products.
	12 - 1:30	Lunch - On Your Own
	2:00 pm	Picture Taking Opportunities Historic Annapolis, Naval Academy; Marine Annapolis - By Boat - Reservations Required (Kodak and Fuji To Supply Film)
	6:15 pm	Buses Leave Hotel For Banquet, Cash Bar
	7:30 pm	Banquet At Bay Ridge Inn
Sat. Sept. 10	9:30 am	Swap Meet - Bring And Buy
	10:30 am	Wrap-Up General Meeting
	12 noon	Lunch - Make Your Own Sandwich - Hotel
	2:00 pm	Sub-Meetings Review Positions
	3:00 pm	Print Exhibition and Judging
	5:30 pm	Cocktail Party And Buffet Dinner At The Annapolis Sailing School. Guests of Mr. and Mrs. J. Wood.
		Awards Announced.

Suggestions welcome. Please send them to David Paskin.

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# Cirkut in Macro Mode

By Robert J. Lang

Rotating panoramic cameras, such as the Cirkut, are almost universally used at large subject distances. It is possible, however, to use them in more confined areas or even in macro-mode for photographing objects about the size of the film and smaller. In principle the problem is the same: keep the movement of the image synchronized with the movement of the film. In practise this can be difficult to achieve.

The macro-panoramic technique can be used to make long strip photographs of small objects, arranged in a circle around the camera. It may be of interest to those who photograph architectural models, toys, flowers or anything else down to the size of insects. Another very useful application is the full-size copying of other panoramic photographs.

Macro-panoramic photography with a "swing-lens" type camera is the same as with a normal camera, assuming that the lens can be close-focused. This is because swing-lens cameras (e.g. Widelux) produce a stationary image on a curved film surface by rotating about the lens nodal point. Although the lens and exposure slit move, the image itself remains stationary.

This is not the case for a 360° panoramic camera, such as the Cirkut, which has a moving film plane rotating about a pivot point offset by some varying amount. As the camera turns, the image itself moves. In this case, the merger of panoramic and macro-photography becomes more complicated. Still, the Cirkut is potentially the best macro-panoramic camera because of the extendable bellows, and a choice of lenses.

The simple theory of the rotating panoramic camera states that the amount of film required for a 360° view is equal to  $2\pi F$ , where  $F$  is the focus distance of the lens (true focal length plus lens extension required to focus). Using this criteria, however, results in some horizontal blurring, which becomes more and more intolerable as the subject distance decreases. At the typical distances in macro-photography, this simple theory is totally unuseable.

Some time ago I wrote, and offered to IAPP members, a computer program which compensated for the location of the pivot point when calculating the required pinion gears for Cirkut cameras. I have now modified this program to provide the information needed to produce macro-panoramas. The user inputs the focal length of the lens and some dimensions of the camera to be used. The computer then



supplies a list of gears with the associated focus distance, lens extension, distance from pivot point to subject, image magnification and f-stop correction factor. The gears required for macro-photography are always considerably smaller (fewer teeth) than those used for normal subject distances. The appropriate gears can be purchased, or a gear supplied for a long focal length lens can be used with a short focal length lens in the macro mode. For example, a 32-tooth gear supplied for an 18" lens on a #8 Cirkut outfit matches with a 6.25" lens when the subject is 25" from the film plane (used for photo above).

To set up for a macro shot with a Cirkut camera, a little carpentry work is required. It is convenient to mount the camera turntable in the middle of a suitable size piece of plywood. For turntables with a center spindle, a hole is drilled for the spindle, with a counterbore for the locking pin, so that the tripod flanges lay flat on the surface. The turntables supplied with some of the smaller Cirkut cameras have no spindle and must be clamped to the plywood. A circle, with a radius equal to the pivot-to-subject distance, is drawn with its center at the center of the turntable. Depth-of-field circles can be drawn for various f-stops also. The subjects to be photographed are then placed within the

area of acceptable focus around the turntable. Pedestals or stands may be used to bring the objects to the proper level.

The camera is pre-focused using the information supplied by the computer program. After selecting the desired gear, the required focus distance (film plane to subject) is determined. The camera is placed on a flat surface and the lensboard is removed. A ruler is placed through the opening and against the ground glass. The specified subject distance is marked, and a flat object, such as a box with some fine lettering on it, is placed at the mark. The bellows is drawn out to the approximate focus position (focal length plus lens extension) and the lens board is replaced. Since it is difficult to focus using lens movements alone when near the 1X magnification point, an iterative approach is used. The test object is moved back and forth until it appears sharp on the ground glass. The bellows is adjusted slightly and the object is moved again. This process is repeated until the object appears sharp and also rests on the previously made mark. A further check can be made if a line of known length is drawn on the test object. The image size can be measured with a ruler on the ground glass and the magnification compared to the that predicted by the computer program. The focus position can be marked on the camera bed so that this procedure will not have to be repeated again.

The film box can now be attached to the body, the pinion gear installed and the whole assembly mounted on the turntable. The computer data is consulted for the f-stop correction and the exposure settings are made. The photograph is then taken in the usual manner.

For a copy of the computer program, (written in BASIC) send a self-addressed envelope with two postage stamps to: Robert Lang, 100 Cooper Ct., Port Jefferson, NY 11777. I would also like to know of other applications of macro-panoramic photography, or how the technique can solve a unique problem.



Image size on 220 film (taken with Cirkut #8 and 6.25" lens wide open)



# Registration for IAPP Conference

Annapolis, Maryland

September 7-10, 1988

Name: \_\_\_\_\_ Title/Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_ Country: \_\_\_\_\_

Business Phone: \_\_\_\_\_ Home phone: \_\_\_\_\_

**Conference Registration** includes admittance to all programs, two lunches, cruise and dinner on Severn River, buffet dinner at Bay Bridge Inn, cocktail party and dinner at Annapolis Sailing School, boat trip around Annapolis Harbor, coffee breaks, etc.

<b>IAPP Member</b>	Before Aug. 10, 1988:	\$125	\$ _____
	After Aug. 10:	140	_____

<b>Non-Member</b>	Add to fees above:	20	_____
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<b>Spouses/children</b>	Before Aug. 10:	100	_____
	After Aug. 10:	115	_____

Names: \_\_\_\_\_

Total Enclosed: \$ \_\_\_\_\_

Return this completed form and check (to IAPP) on or before Aug. 10, 1988 to:

**IAPP**  
**Richard Fowler**  
**1739 Limewood Lane**  
**Orlando, FL 32818-5960 USA**  
Tel. 407-293-8003

Note: Those who do not pre-register may register at the Conference at the higher rate.  
Additional function tickets available at the Conference.

## Sub-Group Registration

Please advise us of which groups you plan to attend so we may reserve the correct space.

	yes	no
Widelux	_____	_____
Hulcher	_____	_____
Cirkut	_____	_____
Alpa	_____	_____
Marketing Pans	_____	_____

**Hotel Rooms** You should make you own hotel reservations (mention IAPP) at:

The Raddison Annapolis Hotel  
126 West St.  
Annapolis, MD 21401  
(301-263-7777, or 800-333-3333)

Rates for single rooms are \$75 per night (Wed/Thur) and \$95 (Fri/Sat). For a double, add \$10 per night.